

CLAIMS

What is claimed is:

1. A method for providing services with guaranteed Quality of Service (QoS) in an IP access network, comprising:

a. a service entity at the network service control layer obtaining the addresses of the calling subscriber and the called subscriber and QoS requirement for the service through analyzing the service request, then applying for network resources to corresponding access network;

b. the edge router of said access network judging whether enough resources can be provided for this service according to the current resource condition, if so, executing step c, otherwise rejecting the service request of the subscriber; and

c. if there are upward traffic streams of the access network in this service, said edge router informing an access network end device of the QoS requirement for the service, the access network end device processing said traffic streams according to the QoS requirement;

if there are downward traffic streams of the access network in this service, said edge router setting priority in access network for this service and forwarding said traffic streams.

2. The method according to Claim 1, wherein in step c, said edge router can transform the service levels into priorities in the access network for the received service streams and forward said traffic streams; or can classify streams first, after identifying the traffic streams, transform the identified results into priorities in the access network and forward the traffic streams.

3. The method according to Claim 1, wherein step c is executed after said edge router has informed the service entity at network service control layer that the access network can provide enough resources for the service and has received confirmation from the service entity.

4. The method according to Claim 1, further comprising the step of said edge router obtaining at least topology structure of the access network and bandwidth resources of each interface through static configuration or dynamic management protocol.

5. The method according to Claim 1, after the access network end device receives QoS requirement of the service in step c, the method further comprising:

setting items of a stream classification table according to the parameters for identifying traffic streams in the QoS requirement;

classifying the received upward traffic streams of the subscriber; and

managing bandwidth according to bandwidth parameters for the service streams matched with the items of the stream classification table, and processing the other service streams as traffic streams without guaranteed QoS.

6. The method according to Claim 5, wherein the step of forwarding the matched service streams by end devices is:

setting the service streams with high priorities and then forwarding the traffic streams for Ethernet access or IP Digital Subscriber Line Access Multiplexer (DSLAM) access; and

sending the traffic streams to Permanent Virtual Circuit (PVC) with guaranteed QoS for further forwarding for ATM DSLAM access.

7. The method according to Claim 5, wherein the parameters for identifying traffic streams can be a four-element group, a five-element group or a seven-element group.

8. The method according to Claim 1, further comprising: before receiving QoS parameters from the edge router of the access network for upward traffic streams, the end devices processing the received traffic streams from the subscriber as service streams without guaranteed QoS.

9. The method according to Claim 1, wherein the network devices between said access network end devices and said edge router of the access network forward the traffic streams according to the priorities of the traffic streams.

10. The method according to Claim 5, further comprising: after the subscriber terminates the service, if there are upward traffic streams, said edge router sending a QoS release command, the access network end devices deleting corresponding items of the stream classification table according to the command parameters.

11. The method according to Claim 6, further comprising: after the subscriber terminates the service, if there are upward traffic streams, said edge router sending a QoS release command, the access network end devices deleting corresponding items of the stream classification table according to the command parameters.

12. The method according to Claim 7, further comprising: after the subscriber terminates the service, if there are upward traffic streams, said edge router sending a QoS release command, the access network end devices deleting corresponding items of the stream classification table according to the command parameters.